

ABSTRACT OF THE DISCLOSURE

A method is disclosed of controlling the thermohysteresis of a homogeneous or layered fibrous pre-form, comprised at least in part of thermoplastic staple length fibers, such that the physical properties of the resulting molded three-dimensional compound construct are significantly enhanced. In particular, the thermohysteresis is the result of a specific thermal history comprising the treatment of a fibrous pre-form with an elevated temperature incubation period followed by a cooling period. A so-treated fibrous pre-form can be subsequently molded by conventional thermomolding methods to render improved toughness, strength and structural stability to a resulting molded construct.